IFW16

RAW SEQUENCE LISTING   DATE: 08/26/2004
PATENT APPLICATION: **US/09/890,813A**   TIME: 11:31:08

Input Set : **A:\BB1430 US PCT Corrected Sequence Listing.txt**
Output Set: **N:\CRF4\08262004\I890813A.raw**

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 3 <110> APPLICANT: E.I. du Pont de Nemours and Company
 5 <120> TITLE OF INVENTION: Aspartate Kinase
 7 <130> FILE REFERENCE: BB1430 PCT
 9 <140> CURRENT APPLICATION NUMBER: 09/890813A
10 <141> CURRENT FILING DATE: 2001-08-02
12 <150> PRIOR APPLICATION NUMBER: PCT/US00/34396
13 <151> PRIOR FILING DATE: 2000-12-19
15 <150> PRIOR APPLICATION NUMBER: 60/172944
16 <151> PRIOR FILING DATE: 1999-12-21
18 <160> NUMBER OF SEQ ID NOS: 28
20 <170> SOFTWARE: PatentIn version 3.2
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 565
24 <212> TYPE: DNA
25 <213> ORGANISM: Zea mays
27 <220> FEATURE:
28 <221> NAME/KEY: unsure
29 <222> LOCATION: (127)
30 <223> OTHER INFORMATION: n=a,c,g or t
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34 aatttcactt atcggaaatg tggagcaatc gtctctcata ctagaaaaga cgggacgtgt  120
35 gctgagngaa agtggggtta atgttcagat gatctcgcaa ggagcgtcaa aggttaacat  180
36 gtcgctgata gtccatgata gcgatgcaaa ggcactcgta gaagcccttc atcaggcgtt  240
37 ctttgaagac gatgtcctat cacaagtcga agcggagaac ctactcgtgg gctgatcaac  300
38 gtaggctttg ctgggtccag gcgtgttatc tgttatagat tcccactcgc ctccatgaac  360
39 ggcatgggca ttggatcatt gatcatgttt tgcttgaaac aagtatgtct tccaggttct  420
40 cagccaatga ctgcaaaact gtgtttctgt tttagaactg tttgcagaca ccagtgagct  480
41 gcgagcaccg attgtcaaca agatggcaag cctgtgatat aattccaact gtctctaatc  540
42 aatatatata ataaacatta tcaat                                        565
45 <210> SEQ ID NO: 2
46 <211> LENGTH: 97
47 <212> TYPE: PRT
48 <213> ORGANISM: Zea mays
50 <220> FEATURE:
51 <221> NAME/KEY: unsure
52 <222> LOCATION: (42)
53 <223> OTHER INFORMATION: Xaa=any amino acid
55 <400> SEQUENCE: 2
56 His Glu Val Glu Glu Leu Glu Lys Ile Ala Ile Val Arg Leu Leu Gln
57  1               5                  10                  15
59 Gln Arg Ala Ile Ile Ser Leu Ile Gly Asn Val Glu Gln Ser Ser Leu
60              20                  25                  30
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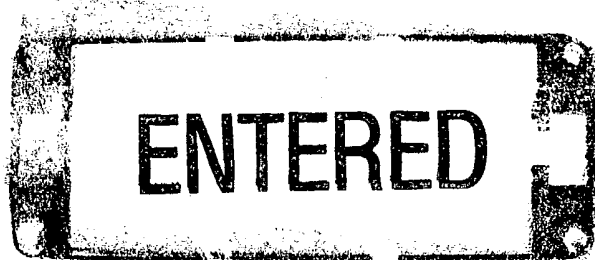
W--> (line 35)

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-->  62 Ile Leu Glu Lys Thr Gly Arg Val Leu Xaa Glu Ser Gly Val Asn Val
     63         35                  40                  45
     65 Gln Met Ile Ser Gln Gly Ala Ser Lys Val Asn Met Ser Leu Ile Val
     66       50                  55                  60
     68 His Asp Ser Asp Ala Lys Ala Leu Val Glu Ala Leu His Gln Ala Phe
     69 65                  70                  75                  80
     71 Phe Glu Asp Asp Val Leu Ser Gln Val Glu Ala Glu Asn Leu Leu Val
     72               85                  90                  95
     74 Gly
     76 <210> SEQ ID NO: 3
     77 <211> LENGTH: 513
     78 <212> TYPE: DNA
     79 <213> ORGANISM: Zea mays
     81 <220> FEATURE:
     82 <221> NAME/KEY: unsure
     83 <222> LOCATION: (474)
     84 <223> OTHER INFORMATION: n=a,c,g or t
     86 <400> SEQUENCE: 3
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     88 ctcgttccgt cgatacctcc ggcgagctct ggacatgttc gaggactggc gtgcttcggt  120
     89 acccgaaccg ggcctcgcgg tgcaagaggg ttgtcaatgg tggtcgccga ctccaccagc  180
     90 cgtcgggcca agcaagcgga cggcggggac ggcgtccttg gggcgcctgt tctcggaggg  240
     91 ctcgggatgg agggattggg ggatcagctc agcgtggtga tgaagttcgg ggggtcctcg  300
     92 gtgtcgtcgg ccgcgaggat ggctgaggtg gccggcctca tcctgacgtt ccccgaggag  360
     93 cgccccgtcg tcgttctctc tgccatgggg aaaaccacca acaaccttct ccttgctggg  420
-->  94 agaaaaggca ataaggtgtg gagttatcat gttttctgaa atccgaagaa tggnatatgg  480
     95 tcaaaaagcc taaaatatca aagtatccca act                               513
     97 <210> SEQ ID NO: 4
     98 <211> LENGTH: 152
     99 <212> TYPE: PRT
    100 <213> ORGANISM: Zea mays
    102 <400> SEQUENCE: 4
    103 Thr Glu Gln Glu Asp Ser Glu Met Ala Ile Pro Val Arg Ser Ala Ala
    104  1               5                  10                  15
    106 Ala Pro Arg Arg Leu Val Pro Ser Ile Pro Pro Ala Ser Ser Gly His
    107             20                  25                  30
    109 Val Arg Gly Leu Ala Cys Phe Gly Thr Arg Thr Gly Pro Arg Gly Ala
    110             35                  40                  45
    112 Arg Gly Leu Ser Met Val Val Ala Asp Ser Thr Ser Arg Arg Ala Lys
    113       50                  55                  60
    115 Gln Ala Asp Gly Gly Asp Gly Val Leu Gly Ala Pro Val Leu Gly Gly
    116 65                  70                  75                  80
    118 Leu Gly Met Glu Gly Leu Gly Asp Gln Leu Ser Val Val Met Lys Phe
    119               85                  90                  95
    121 Gly Gly Ser Ser Val Ser Ser Ala Ala Arg Met Ala Glu Val Ala Gly
    122             100                 105                 110
    124 Leu Ile Leu Thr Phe Pro Glu Glu Arg Pro Val Val Val Leu Ser Ala
    125           115                 120                 125
    127 Met Gly Lys Thr Thr Asn Asn Leu Leu Leu Ala Gly Arg Lys Gly Asn
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128       130                  135                 140
130 Lys Val Trp Ser Tyr His Val Phe
131 145                  150
133 <210> SEQ ID NO: 5
134 <211> LENGTH: 1985
135 <212> TYPE: DNA
136 <213> ORGANISM: Zea mays
138 <220> FEATURE:
139 <221> NAME/KEY: unsure
140 <222> LOCATION: (532)
141 <223> OTHER INFORMATION: n=a,c,g or t
143 <220> FEATURE:
144 <221> NAME/KEY: unsure
145 <222> LOCATION: (1180)
146 <223> OTHER INFORMATION: n=a,c,g or t
148 <400> SEQUENCE: 5
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150 ccgccgcctc gttccgtcga tacctccggc gagctctgga catgttcgag gactggcgtg  120
151 cttcggtacc cgaaccgggc ctcgcggtgc aagagggttg tcaatggtgg tcgccgactc  180
152 caccagccgt cgggccaagc aagcggacgg cggggacggc gtccttgggg cgcctgttct  240
153 cggagggctc gggatggagg gattggggga tcagctcagc gtggtgatga agttcggggg  300
154 gtcctcggtg tcgtcggccg cgaggatggc tgaggtggcc ggcctcatcc tgacgttccc  360
155 cgaggagcgc cccgtcgtcg ttctctctgc catggggaaa accaccaaca accttctcct  420
156 tgctggagag aaggcagtag ggtgtggagt tatccatgtt tctgaaatcg aagagtggaa  480
W--> 157 tatggtcaaa agcctacata tcaagacggt ggatgaactt ggacttccaa gnatctgtaa  540
158 tacaagcctt tatgaactgg agcaactatt gaaaggtatc gctatgatga aagagctgac  600
159 gcctaggacc agtgactacc ttgtttcatt tggagaatgc atgtccacca ggattttttc  660
160 tgcttatttg aacaaaattc gtgtcaaggc acggcagtat gacgcatttg atattggttt  720
161 cattacaact gatgaatttg gtaatgcgga tatcttagaa gcaacctatc ctgctgttgc  780
162 gaagagactt catggggact ggatacagga tccagcgata cctgttgtta ctgggttcct  840
163 tgggaagggc tggaaatctg gtgctgtaac tactttaggc cgaggtggta gtgacttgac  900
164 tgctacaacc attggtaaag ccttgggact gagagaaatt caggtatgga aagatgttga  960
165 tggtgtactt acttgtgatc caaatatcta cccacatgca aagactgttc catacttaac 1020
166 atttgaagag gccacagaac ttgcttattt tggtgctcag gtttttgcatc cacaatcgat 1080
167 gagacctgct agagaaggtg atattccagt tagggttaag aattcataca accctaaagc 1140
W--> 168 tccaggcacc cttattacca gacaaagaga catggataan ggtctggttg tactaactag 1200
169 catagtgctc aagtcaaatg tcactatgtt ggacattgtg agcactcgga tgcttggtca 1260
170 gtatggtttt ctggcaaggg tatcaggtat ttgctatatt gaagatctat gtatatctgt 1320
171 ggattgtgtt gctaccagtg aagttagtgt ttctgtgtca cttgatccat caaagatctg 1380
172 gagtagggaa ctgatacagc aggcaagtga acttgaccat gtagttgaag agcttgagaa 1440
173 aatagcaatt gttcgtctac ttcagcagag ggcgataatt tcacttatcg gaaatgtgga 1500
174 gcaatcgtct ctgatactag aaaagacggg acgtgtgctg aggaaaagtg gggttaatgt 1560
175 tcagatgatc tcgcaaggag cgtcaaaggt taacatgtcg ctgatagtcc atgatagcga 1620
176 tgcaaaggca ctcgtagaag cccttcatca ggcgttcttt gaagacgatg tcctatcaca 1680
177 agtcgaagcg gagaacctac tcgtgggctg atcaacgtag gctttgctgg gtccaggcgt 1740
178 gttatctgtt atagattccc actcgcctcc atgaacggca tgggcattgg atcattgatc 1800
179 atgtttgct tgaaacaagt atgtcttcca ggttctcagc caatgactgc aaaactgtgt 1860
180 ttctgtttta gaactgtttg cagacaccag tgagctgcga gcaccgattg tcaacaagat 1920
181 ggcaagcctg tgatataatt ccaactgtct ctaatcaata tatataataa acattatcaa 1980
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Input Set : A:\BB1430 US PCT Corrected Sequence Listing.txt
Output Set: N:\CRF4\08262004\I890813A.raw

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182 tatct                                                          1985
184 <210> SEQ ID NO: 6
185 <211> LENGTH: 560
186 <212> TYPE: PRT
187 <213> ORGANISM: Zea mays
189 <220> FEATURE:
190 <221> NAME/KEY: UNSURE
191 <222> LOCATION: (168)
192 <223> OTHER INFORMATION: Xaa=any amino acid
194 <220> FEATURE:
195 <221> NAME/KEY: UNSURE
196 <222> LOCATION: (384)
197 <223> OTHER INFORMATION: Xaa=any amino acid
199 <400> SEQUENCE: 6
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201  1                5                  10                  15
203 Ser Ile Pro Pro Ala Ser Ser Gly His Val Arg Gly Leu Ala Cys Phe
204  •            20                  25                  30
206 Gly Thr Arg Thr Gly Pro Arg Gly Ala Arg Gly Leu Ser Met Val Val
207          35                  40                  45
209 Ala Asp Ser Thr Ser Arg Arg Ala Lys Gln Ala Asp Gly Gly Asp Gly
210      50                  55                  60
212 Val Leu Gly Ala Pro Val Leu Gly Gly Leu Gly Met Glu Gly Leu Gly
213  65                  70                  75                  80
215 Asp Gln Leu Ser Val Val Met Lys Phe Gly Gly Ser Ser Val Ser Ser
216                  85                  90                  95
218 Ala Ala Arg Met Ala Glu Val Ala Gly Leu Ile Leu Thr Phe Pro Glu
219              100                 105                 110
221 Glu Arg Pro Val Val Val Leu Ser Ala Met Gly Lys Thr Thr Asn Asn
222          115                 120                 125
224 Leu Leu Leu Ala Gly Glu Lys Ala Val Gly Cys Gly Val Ile His Val
225      130                 135                 140
227 Ser Glu Ile Glu Glu Trp Asn Met Val Lys Ser Leu His Ile Lys Thr
228 145                 150                 155                 160
230 Val Asp Glu Leu Gly Leu Pro Xaa Ile Cys Asn Thr Ser Leu Tyr Glu
231                 165                 170                 175
233 Leu Glu Gln Leu Leu Lys Gly Ile Ala Met Met Lys Glu Leu Thr Pro
234              180                 185                 190
236 Arg Thr Ser Asp Tyr Leu Val Ser Phe Gly Glu Cys Met Ser Thr Arg
237          195                 200                 205
239 Ile Phe Ser Ala Tyr Leu Asn Lys Ile Arg Val Lys Ala Arg Gln Tyr
240      210                 215                 220
242 Asp Ala Phe Asp Ile Gly Phe Ile Thr Thr Asp Glu Phe Gly Asn Ala
243 225                 230                 235                 240
245 Asp Ile Leu Glu Ala Thr Tyr Pro Ala Val Ala Lys Arg Leu His Gly
246              245                 250                 255
248 Asp Trp Ile Gln Asp Pro Ala Ile Pro Val Val Thr Gly Phe Leu Gly
249          260                 265                 270
251 Lys Gly Trp Lys Ser Gly Ala Val Thr Thr Leu Gly Arg Gly Gly Ser
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W--> (arrow pointing to line 230)

RAW SEQUENCE LISTING   DATE: 08/26/2004
PATENT APPLICATION: US/09/890,813A   TIME: 11:31:08

Input Set : A:\BB1430 US PCT Corrected Sequence Listing.txt
Output Set: N:\CRF4\08262004\I890813A.raw

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252         275              280              285
254 Asp Leu Thr Ala Thr Thr Ile Gly Lys Ala Leu Gly Leu Arg Glu Ile
255     290              295              300
257 Gln Val Trp Lys Asp Val Asp Gly Val Leu Thr Cys Asp Pro Asn Ile
258 305              310              315              320
260 Tyr Pro His Ala Lys Thr Val Pro Tyr Leu Thr Phe Glu Glu Ala Thr
261              325              330              335
263 Glu Leu Ala Tyr Phe Gly Ala Gln Val Leu His Pro Gln Ser Met Arg
264              340              345              350
266 Pro Ala Arg Glu Gly Asp Ile Pro Val Arg Val Lys Asn Ser Tyr Asn
267              355              360              365
-> 269 Pro Lys Ala Pro Gly Thr Leu Ile Thr Arg Gln Arg Asp Met Asp Xaa
270     370              375              380
272 Gly Leu Val Val Leu Thr Ser Ile Val Leu Lys Ser Asn Val Thr Met
273 385              390              395              400
275 Leu Asp Ile Val Ser Thr Arg Met Leu Gly Gln Tyr Gly Phe Leu Ala
276              405              410              415
278 Arg Val Ser Gly Ile Cys Tyr Ile Glu Asp Leu Cys Ile Ser Val Asp
279              420              425              430
281 Cys Val Ala Thr Ser Glu Val Ser Val Ser Val Ser Leu Asp Pro Ser
282     435              440              445
284 Lys Ile Trp Ser Arg Glu Leu Ile Gln Gln Ala Ser Glu Leu Asp His
285     450              455              460
287 Val Val Glu Glu Leu Glu Lys Ile Ala Ile Val Arg Leu Leu Gln Gln
288 465              470              475              480
290 Arg Ala Ile Ile Ser Leu Ile Gly Asn Val Glu Gln Ser Ser Leu Ile
291              485              490              495
293 Leu Glu Lys Thr Gly Arg Val Leu Arg Lys Ser Gly Val Asn Val Gln
294              500              505              510
296 Met Ile Ser Gln Gly Ala Ser Lys Val Asn Met Ser Leu Ile Val His
297     515              520              525
299 Asp Ser Asp Ala Lys Ala Leu Val Glu Ala Leu His Gln Ala Phe Phe
300     530              535              540
302 Glu Asp Asp Val Leu Ser Gln Val Glu Ala Glu Asn Leu Leu Val Gly
303 545              550              555              560
305 <210> SEQ ID NO: 7
306 <211> LENGTH: 1953
307 <212> TYPE: DNA
308 <213> ORGANISM: Zea mays
310 <400> SEQUENCE: 7
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312 gttccgtcga tacctccggc gagctctgga catgttcgag gactggcgtg cttcggtacc   120
313 cgaaccgggc ctcgcggtgc aagagggttg tcaatggtgg tcgccgactc caccagccgt   180
314 cgggccaagc aagcggacgg cggggacggc gtccttgggg cgcctgttct cggagggctc   240
315 gggatggagg gattggggga tcagctcagc gtggtgatga agttcggggg gtcctcggtg   300
316 tcgtcggccg cgaggatggc tgaggtggcc ggcctcatcc tgacgttccc cgaggagcgc   360
317 cccgtcgtcg ttctctctgc catggggaaa accaccaaca accttctcct tgctggagag   420
318 aaggcagtag ggtgtggagt tatccatgtt tctgaaatcg aagagtggaa tatggtcaaa   480
319 agcctacata tcaagacggt ggatgaactt ggacttccaa gatctgtaat acaagacatg   540
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 08/26/2004
PATENT APPLICATION: US/09/890,813A   TIME: 11:31:09

Input Set : A:\BB1430 US PCT Corrected Sequence Listing.txt
Output Set: N:\CRF4\08262004\I890813A.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 127
Seq#:2; Xaa Pos. 42
Seq#:3; N Pos. 474
Seq#:5; N Pos. 582,1180
Seq#:6; Xaa Pos. 168,384
Seq#:9; N Pos. 366,394,406,414,425,431,455
Seq#:13; N Pos. 289,329,393,435,551,582,583,616,626,632,637,640
Seq#:14; Xaa Pos. 110,131,145

VERIFICATION SUMMARY   DATE: 08/26/2004
PATENT APPLICATION: **US/09/890,813A**   TIME: 11:31:09

Input Set : **A:\BB1430 US PCT Corrected Sequence Listing.txt**
Output Set: **N:\CRF4\08262004\I890813A.raw**

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L:35 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:120
L:62 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:32
L:94 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:420
L:157 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:480
L:168 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:1140
L:230 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:160
L:269 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:368
L:503 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:360
L:504 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:420
L:682 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:240
L:683 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:300
L:684 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:360
L:685 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:420
L:687 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:540
L:688 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:600
L:729 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:96
L:735 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:128
L:738 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:144
```